

## METHOD AND APPARATUS FOR ASSIGNING BIT METRICS FOR ALGEBRAIC SOFT DECISION DECODING

### Abstract of the Disclosure

A receiver includes a detector and a decoder. The detector is adapted to demodulate a received signal to generate a received word. The received word includes a plurality of symbols, and each symbol contains data associated with a first phase and data associated with a second phase. The detector is further adapted to generate a plurality of energy values relating each received symbol to one of a plurality of potential symbols. The decoder is adapted to generate a first set of bit metrics based on the energy values in response to the receiver being assigned to the first phase and a second set of bit metrics based on the energy values in response to the receiver being assigned to the second phase. The decoder is further adapted to identify the least reliable bits in the received word based on one of the first and second sets of bit metrics.